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09/674,620	11/03/2000	Hidekuni Moriya	Q60962	1567

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Sughrue Mion Zinn
Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037-3202

EXAMINER	
ROSARIO, DENNIS	
ART UNIT	**PAPER NUMBER**
2621	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/674,620	MORIYA ET AL.	
	Examiner	Art Unit	
	Dennis Rosario	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/07/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment was received on November 1, 2004. Claims 1-14 are pending.

Response to Arguments

2. Applicant's arguments filed 11/01/2004 on page 3, lines 4-8 have been fully considered but they are not persuasive.

Page 3, lines 4-8 are directed towards the Yamashita reference; however, Fujita previously disclosed the claimed limitations stated on page 3,lines 4-8 of the amendment.

Applicant's arguments filed 11/01/2004 on page 3, line 17 to page 4, line 8 with respect to claims 1,13 and 14 have been fully considered but they are not persuasive.

The arguments state that Fujita does not disclose or suggest comparing "the recited distribution obtained through the predetermined process with a prescribed model distribution. Namely, the inspection is performed between the two distributions."; and further, states that Fujita and Yamashita does not teach "the aspect of the claimed invention which targets a distribution as an inspection object."

However, Fujita does disclose comparing (Figure 3 shows a comparison step n8.) the recited distribution (SS(x) is the claimed distribution that is compared in the comparison step n6 of figure 3. Note that SS(x) is a value based on a distribution of pixel values as shown in figure 2 and mentioned in col. 6, lines 16-25.) obtained through the predetermined process (Equations (2) and (3) are a predetermined process that obtains the distribution SS(X).) with a prescribed model distribution (Step n8 compares

SS(X) or SS with a prescribed model distribution. Where the distribution is in the vertical, lateral or diagonal as shown in fig. 3, label n8. Where the model is an equation (10) shown in col. 9, line 14 that describes or models an "image area" in col. 9, line 22 using the distribution in the vertical, lateral or diagonal directions. Also, according to the specification the prescribed model distribution is based on a "statistical point of view" in page 7, line 12,13 of the specification which includes determining "differences of tone levels" in page 7, lines 17-19 of the specification or a "prescribed threshold" in page 14, line 23 of the specification that is based on a statistical point of view using an "average" in page 14, line 24 of the specification that detects an object. Thus, equation (10) is a model based on a threshold that identifies or detects or models an object for comparison. Even though the word "model" is not used in the Fujita reference, the Fujita reference still performs the same operation of a model as described in the specification.) Namely, the inspection (Fig. 3, step n8 is an inspection or comparison step.) is performed between the two distributions (Fig. 3, step n8 inspects or compares SS or SS(X), which is a distribution of pixels as shown in fig. 2 with a distribution in vertical, lateral or diagonal directions using equations (10) that models or describes an image area.); and

Fujita further discloses the aspect of the claimed invention which targets (Fig. 3, label n8 targets an area of a distribution as shown by the outputs of fig. 3, label: n8.) a distribution (SS(x) is a value based on a distribution of pixel values as shown in figure 2 and mentioned in col. 6, lines 16-25. Thus, SS(x) is a distribution.) as an inspection

object (Fig. 3, label n8: SS(X) is an inspection object because it corresponds to "a pixel...belonging to the...image area... [to be]... extracted...(col. 6, lines 43,44).").

Applicant's arguments on pages 4 and 5 with respect to claims 1,13 and 14 have been considered but are moot in view of the new ground(s) of rejection (Fujita et al., US Patent 5,659,402 A).

Claim Objections

3. The following quotations of 37 CFR § 1.75(a) is the basis of objection:

> (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

4. Claims 4 and 7 are objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Claim 4, line 3:"said range of greater differences" has no antecedent basis, thus claim 4 ought to be amended to depend from claim 2.

Claim 7, line 2:" said range of smaller differences" has no antecedent basis, thus claim 7 ought to depend from claim 2.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (US Patent 5,659,402 A).

Regarding claims 1,13, and 14 Fujita et al. discloses a computer (Fig. 3 and col. 12, lines 30-48) method of a system (fig. 1 and 5) wherein an image data retouching apparatus for determining the characteristic of each picture element in image data which express images in a dot matrix form in multiple tones and retouching each picture element in a way appropriate to its characteristic, said apparatus comprising:

a) an image data acquisition unit (Fig. 1, num. 1 and 2) for acquiring said image data (As shown in fig. 8);

b) a picture element characteristic determining unit (fig. 1 , num. 5: AREA SEPARATING CIRCUIT determines picture elements that have characteristics as shown in fig. 3, labels: CHARCTER IMAGE AREA and GRAY-SCALE IMAGE AREA.) for figuring out the distribution (Fig. 2 shows a distribution of pixels labeled as A,B,C and D.) of differences (Figure 1, num. 5 figures out a difference as shown in fig. 5,num. 31:...DIFFERENTIAL VALUE S of the distribution of pixels A,B,C and D using equation (2) in col. 6, line 22. Note that equation (2) uses the distribution of pixels A,B,C and D in a difference. Hence, equation (2) figures out a distribution of differences, S(X), which is modified to (SS(X) in equation (3) of line 23.) tone levels ("multivalued density data" in col. 6, line 13) between object picture elements (Fig. 2 shows an "object pixel X" in col. 6, line 13, where DIFFERENTIAL VALUE S is determined for one picture element used a plurality of times as shown in equation (2) in column 6.), which are the picture elements of the image data (As shown in fig. 8) acquired by said image data acquisition unit (Fig. 1, num. 1 and 2), and neighboring picture elements (fig. 2, boxes labeled A, B, C, D,E and H) in a prescribed range (The range is the 3X3 pixel matrix as described above) around the object picture elements (The object picture element or object pixel X is surrounded by pixels A,B,C,D,E and H.), and

c) determining (Fig. 3 is a flowchart that determines via a determining step n8:ARE VALUES SS OF THREE PIXELS ALIGNING IN THE VERTICAL, LATERAL OR DIAGONAL DIRECTION ALL GREATER THAN f?.) the characteristic (Characteristics as shown in fig. 3, labels: CHARCTER IMAGE AREA and GRAY-SCALE IMAGE AREA.) of each object picture element (Fig. 2 shows an "object pixel X" in col. 6, line 13) by comparing (Fig. 3 is a flowchart that determines via a comparing step n8:ARE VALUES SS OF THREE PIXELS ALIGNING IN THE VERTICAL, LATERAL OR DIAGONAL DIRECTION ALL GREATER THAN f?.) the distribution so figured out (Equation (2) figures out a distribution of differences, S(X), which is modified to (SS(X) in equation (3) of line 23.) with a prescribed model distribution (Step n8 compares SS(X) or SS with a prescribed model distribution. Where the distribution is in the vertical, lateral or diagonal line shown in fig. 2 and mentioned in fig. 3, label n8. Where the model of fig. 3, label n8 is an equation (10) shown in col. 9, line 14 that describes or models an "image area" in col. 9, line 22 using the distribution in the vertical, lateral or diagonal directions.); and

d) an image data retouching unit (fig. 1, num. 6: DIFFERENTAIL FILTER and fig. 1, num.7: DIFFERENTIAL FILTER) for executing prescribed image processing (Using figure 1 , Fujita et al. states, "The differential filter 6 performs a processing operation suitable for the character image data, and serves to emphasize the profile of the character image by making the boundary between black pixels and white pixels distinct. The integrating filter 7 performs a processing operation suitable for the dotted image data, and serves to smooth the dotted image data (col. 5., lines 25-31).") according to the characteristic (fig. 3, labels: CHARCTER IMAGE AREA and GRAY-SCALE IMAGE AREA) of picture elements determined by said picture element characteristic determining unit (fig. 1 , num. 5: AREA SEPARATING CIRCUIT determines picture elements that have characteristics as shown in fig. 3, labels: CHARCTER IMAGE AREA and GRAY-SCALE IMAGE AREA.).

Regard to claim 2, Fujita et al. discloses an image data retouching apparatus (fig. 1 or fig. 5) as claimed in claim 1, wherein said picture element characteristic determining unit (fig. 1 , num. 5 or in detail at figure 5, num. 5) utilizes for determination the distribution (Fig. 2 shows a distribution of pixels labeled as A,B,C and D.) in a range of smaller differences ("absolute value is small" in col. 1, line 65) and the distribution (Fig. 2 shows a distribution of pixels labeled as A,B,C and D.) in a range of greater ("absolute value of the...differential is large" in col. 1, line 64) differences (Fujita et al. states, "That is, the absolute value of the quadratic differential [or difference] value S is large in the character [or edge] image area, while the absolute value is small in the gray-scale image area. Therefore, the discrimination between the character image area and gray-scale image area can be achieved by judging on the magnitude of the quadratic differential value S (col. 1, lines 63-67 and col. 2, lines 1,2).") The results of figure 5, num. 31 computes the distribution "S" which is inputted into the data retouching apparatus, fig. 5, num. 6 and 7.

Regarding claim 3, Fujita et al. discloses an image data retouching apparatus, as claimed in claim 1, wherein said picture element characteristic determining unit (fig. 1 or 5, num. 5) utilizes for determination the positive or negative polarization of said distribution (Fujita states, "The density variation value may be either a positive or negative value because it is calculated based on density differences between the object pixel and the respective peripheral pixels around the object pixel (col. 2, lines 61-64). ") Note that the density differences "S" or distribution is calculated in fig. 5, num. 5 at numeral 31.

With regard to claim 4, Fujita discloses a method of a system wherein an image data retouching apparatus, as claimed in claim 1 , wherein said picture element characteristic determining unit (fig. 5, num. 5 comprises numeral 41 that determines whether "S" is in the character or edge image area in col. 12, lines 60-65.) determines picture elements to be edge picture elements (or character image elements) if the distribution (Fig. 2 shows a distribution of pixels labeled as A,B,C and D.) in said range of greater differences ("absolute value of the...differential is large" in col. 1, line 64) is dominant (A large differential value is dominant because it can be used to discriminate between areas.) and if said distribution is polarized positively ("S" is an absolute value).

Regarding claim 5, Fujita discloses a method of a system wherein an image data retouching apparatus (fig. 1 or fig. 5), as claimed in Claim 1, wherein said image data retouching unit (fig. 1 or 5, num. 6 and 7,respectively.) executes sharpening of images (fig. 1, num. 6: DIFFERENTIAL FILTER emphasizes characters or letters as mentioned in col. 10, line 51.) if said object picture elements (Fig. 2 shows an "object pixel X" in col. 6, line 13, where DIFFERENTIAL VALUE S is determined for one picture element used a plurality of times as shown in equation (2) in column 6.) are determined to be edge picture elements ("characters" or letters as mentioned in col. 10, line 51 include edge picture elements.)

Regarding claim 6, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 5, wherein said sharpening (fig. 1, num. 6: DIFFERENTIAL FILTER emphasizes characters or letters as mentioned in col. 10, line 51) forms a matrix (fig. 2) having a prescribed number (3X3) of picture elements centering on an object picture element ("X" of figure 2) and is executed by a sharpening filter (Fig. 5, num. 6) wherein a prescribed coefficient(Equation (14) represents the differential filter of fig. 1,num. 6 where a coefficient of "1/2" is used.) to emphasize the object picture element (Fig. 2 shows an "object pixel X" in col. 6, line 13, where DIFFERENTIAL VALUE S is determined for one picture element used a plurality of times as shown in equation (2) in column 6.) is set(integrated in equation (14)) in each picture element position (A,B,C and D) in the matrix (fig. 2).

Regarding claim 7, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in 1, wherein said picture element characteristic determining unit (fig. 1 or 5, num. 5) determines picture elements to be moire picture elements (Fujita et al. states," In accordance with this embodiment, however, since the dotted image data sent to the error diffusion circuit 11 is preliminarily smoothed by the integrating filter 7, the moire is not generated. That is, by processing the dotted image data in the integrating filter 7, the dotted image data can be processed in the same manner as the gray-scale image data (col. 5, lines 57-63) (Using figure 1, the area separating circuit 5 indirectly determines whether a moiré is present by determining whether a dotted image data is present; as a result, all dotted image data are susceptible to moiré which are smoothed by the integrating filter 7.) if the distribution "S" in said range of smaller differences ("absolute value is small" in col. 1, line 65) is dominant (A small differential value is dominant because it can be used to discriminate between areas.) and if said distribution (Fig. 2 shows a distribution of pixels labeled as A,B,C and D.) is polarized positively (An absolute value of "S" is calculated based on the distribution.) or negatively (Note that negative values can be used as discussed in Fujita et al., col. 2, lines 61-64.)

With regard to claim 8, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 1, wherein said image data retouching unit (fig 1 or 5, num. 6 and 7) executes smoothing of images (Fujita et al. states, "The integrating filter 7 performs a processing operation suitable for the dotted image data, and serves to smooth the dotted image data (col. 5, lines 29-31).") if said object picture elements are determined to be moire picture elements (addressed in claim 7).

Regarding claim 9, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in Claim 8, wherein said smoothing (Fujita et al. states, "The integrating filter 7 performs a processing operation suitable for the dotted image data, and serves to smooth the dotted image data (col. 5, lines 29-31).") forms a matrix (Fig. 2 is a matrix) having a prescribed number of picture elements (3 X 3 picture elements.) centering on an object picture element ("X" of fig. 2) and is executed by a smoothing filter (Fig. 1, num.7: INTEGRATING FILTER) wherein prescribed coefficients (An equation,(15), shown in column 10 represents the filter of fig. 1,num. 7 where a coefficient of "1/4" is used.) are set to roughly average (Using equation (15) at column 10, line 65 an average (FOUT(X)) has the claimed different picture element positions shown as 4 values that are determined and divided by 4.) said object picture elements ("X" of fig. 2) in different picture element positions in the matrix (fig. 2 is a matrix).

With regard to claim 10, Fujita et al. discloses a method of a system wherein an image data retouching apparatus (fig. 1 or 5), as claimed in claim 1 , wherein said image data retouching unit (fig. 1 or 5, num. 6 and 7) obtains a retouching value (fig 5, numerals 6 and 7 has an input arrow as the retouching value from numeral 31) for the luminance value (gray scale value) of said image data (fig. 5, num. 21 is RAM that stores the multivalue data.), and adds the data values from numerals 31 and 21 are added together in fig. 5, num. 6 and 7 using the corresponding arrows.) the retouching value to the tone values (Fig. 6 and 7 has another set of input arrows from num. 21 as the tone vales or multivalue data.) of element colors (Multivalue data is color data.) to retouch the image data.

Regard to claim 11, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in claim 1 , wherein:

in retouching the image data of the picture elements, an image data attribute specifying unit (fig. 5, num. 35 selects a certain filter based on attributes or a threshold.) for acquiring specification of the attribute (Fig. 5, num. 32 is an assigned threshold SSA,SSAM,SSC,BEDGE and BEGDEH of attributes that specify character, grey, and dotted images.) of image data to be handled is caused to execute the function thereof, and

said image data retouching unit (fig. 1 or 5) is caused to execute the function thereof on the basis of the image data having the attribute acquired by said image data attribute specifying unit (The data retouching unit corrects the image data based on the selection fig. 5, num. 35 of a filter using attributes acquired by fig. 5, num. 35).

With regard to claim 12, Fujita et al. discloses a method of a system wherein an image data retouching apparatus, as claimed in claim 11, wherein said image data attribute specifying unit (fig. 5, num. 35) specifies luminance or "gray-scale image" signals as the attribute when high-speed image data retouching is desired (Fujita et al. states," Therefore, the object pixel can be properly processed at a high speed in accordance with the type of image area to which the object pixel belongs in col. 3, lines 29-31).") and specifies element color signals constituting an image as the attribute (This element was addressed in claim 1 at "multivalue.d density data") when high-quality image data retouching is desired (Fujita et al. states, " The present invention relates to image processing methods and image processing apparatuses for properly processing a character image, gray-scale image and dotted image for high-quality image reproduction...col. 1, lines 5-9)."

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is 703-305-5431. The examiner can normally be reached on 6-3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DR
Dennis Rosario
Unit 2621

BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600